

December 4, 1998

SPACE CENTER Roundup

VOL. 37, NO. 18 LYNDON B. JOHNSON SPACE CENTER, HOUSTON, TEXAS

Sun rises on station era

Station flight controllers begin mission operations



A Russian Proton rocket lifts off from Baikonur Cosmodrome in Kazakhstan carrying Zarya. Station flight controllers and engineering teams in Houston and Moscow support operations.

By William P. Jeffs

All systems are performing as expected aboard Zarya, the first component of the International Space Station, launched at 12:40 a.m. CST on November 20 from Kazakhstan. A Russian Proton rocket placed the control module into orbit where it will await the arrival of Unity, a connecting node to be delivered by the crew of space shuttle mission STS-88. With the launch of Zarya, ISS flight controllers and engineering support teams in Houston and Moscow began operations.

Delegates from many of the 16 nations participating in the assembly and eventual operation of the space station gathered in Central Asia for the launch of Zarya. The Russian Proton rocket lifted off flawlessly, carrying Zarya from the Baikonur Cosmodrome.

Ten minutes later, the module had attained its initial orbit, an elliptical course that took it to an elevation of 220 miles at its highest point and 115 miles at its lowest. Communications and guidance antennas and the spacecraft's pair of 35-foot-long solar arrays soon deployed as scheduled.

Zarya, a 42,600-pound, 41-foot-long spacecraft, will function as a sort of space tugboat, providing Unity with early power, propulsion and communications and the capability to dock via remote control with the third station component, the Russian-provided Service Module. The Service Module will enhance or replace many of Zarya's functions.

Now Zarya awaits its union with Unity, the second large component of the ISS to be delivered by the STS-88 crew. The crew has trained for more than two years to perform the linkup in space.

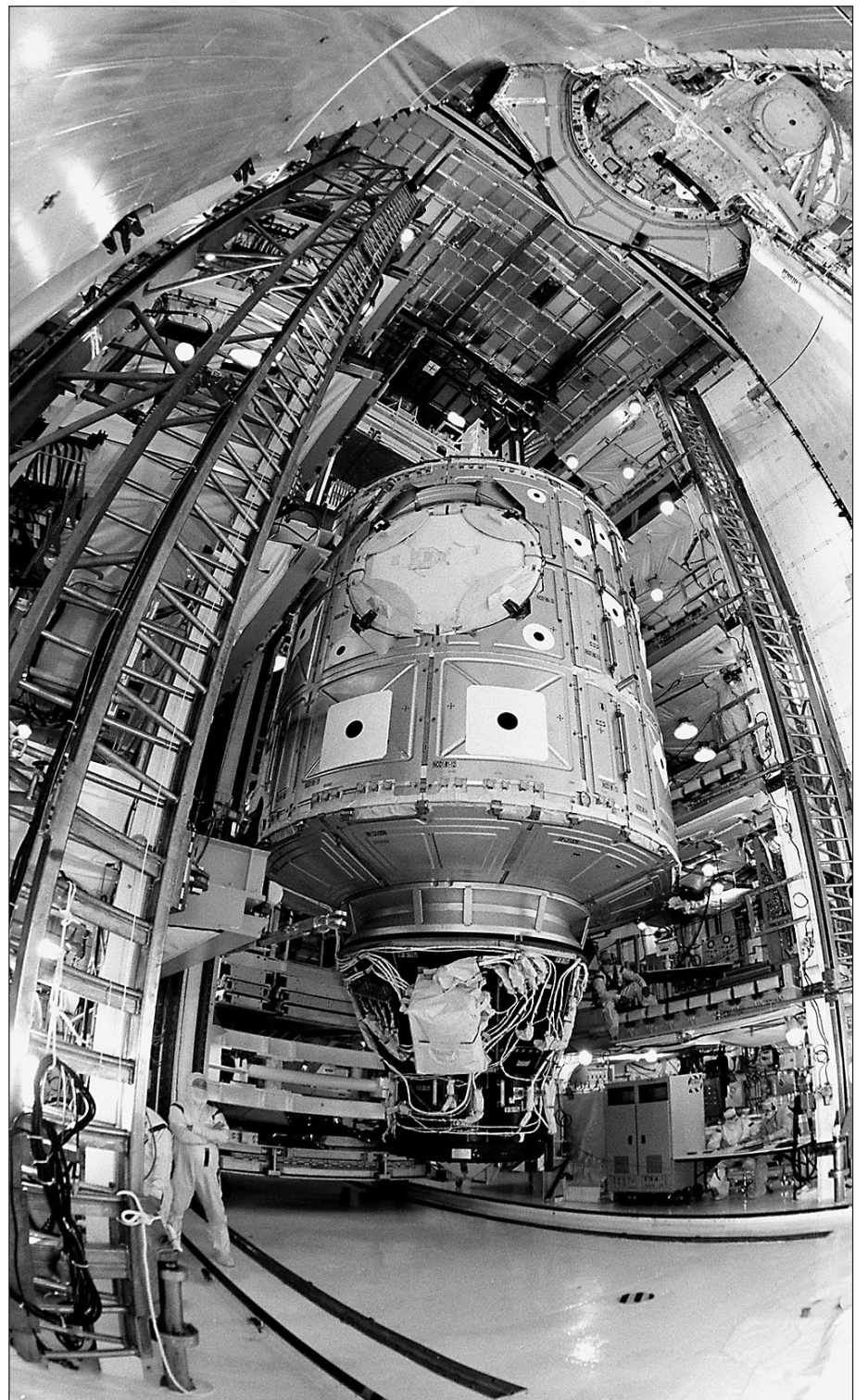
The 11-day mission will feature more than 30 hours of operations with *Endeavour's* robot arm and at least three seven-hour space walks. When it is in a circular orbit about 240 statute miles above the surface of the Earth, *Endeavour*, with Unity upright in its cargo bay, will capture Zarya and attach the two initial elements to one another before releasing both elements to await subsequent space station components. Unity and Zarya will serve as a bridge between future Russian, American, European and Japanese segments.

The six-sided Unity connecting module, with two mating adapters attached, is 34 feet long and weighs about 25,600 pounds. It has six docking ports, one on each side, to which future modules will be attached.

ISS flight controllers and engineering support teams in Houston and Moscow began their monitoring duties with the launch of Zarya.

Since the launch of Zarya, the teams have completed all mandatory on-orbit preparations for the launch of STS-88 and Unity. These activities included five translational maneuvers which tested the capabilities of Zarya's orbital maneuvering systems and placed Zarya in the STS-88 rendezvous altitude.

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KSC Photo KSC-98EC-1650

Looking like a painting, this wide-angle view shows Unity connecting module being moved toward the payload bay of *Endeavour* at Launch Pad 39A. Part of the International Space Station, Unity is a connecting passageway to the station's living and working areas.



Flight Activity
Officers receive
high honor.

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a new
OUTLOOK.

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